

A COMPREHENSIVE STUDY ON MULTIMODAL TRANSPORTATION SYSTEM IN BANGLADESH

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Abstract

For a decade, the industrial production and manufacturing activities have been raised to an impressive number where transportation played a significant role on the entire supply chain process. In order to reduce total cost, a low cost transportation system is needed by integrating different modes of transportation. Though Bangladesh has a vast river network and transportation cost through inland waterways is relatively cheap, this sector is not used to its full potential. Collecting and analyzing data by citing research papers, newspapers and magazines; we are trying to provide an overall picture of Inland waterways transportation status of Bangladesh, possibilities and relative shortcomings to its enlargement.

1.Introduction

Multimodal Transportation(MT) is the combination of at least two or more different modes to move goods from a single point to another point [1]. The transportation of containerized product creates an opportunity to implement multimodal transportation system via rail, waterways, air and road. MT or Combined transport thus implies the organization of intermodal door-to-door transport by transferring the goods from one mode of transport to another efficiently, coordinately, seamlessly without changing the loading unit [2]. MT system demands synchronizations, infrastructure, advance, efficient services, administrative legal framework [3].

2. Transportation status of Bangladesh

Chittagong port located at the port city Chittagong is the gateway of all export-import of Bangladesh [4]. Currently, 98% of total container is handled by the port this to export-import [5]. Annually it handles approximately 3 million TEUs containers and ranked 58th among top 100 ports [6]. A graphical representation of cargo handling statistics of Chittagong Port Authority is given:

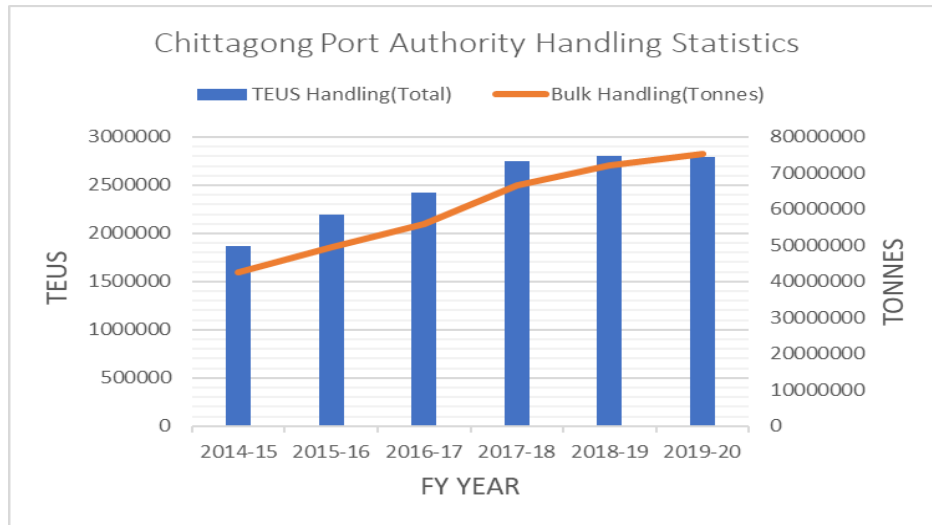


Fig 1: Cargo handling data by Chittagong Port Authority (source: www.CPA.gov.bd.com)

Past few years, there is a rise in economic activities in Bangladesh. The port city Chittagong is well connected by air, road, rail, inland waterways to the capital city Dhaka which is called the center of all economic activities. As a result, we also see a rise in cargo handling capacity in Chittagong Port. On the other hand, there is no direct connection between Dhaka to Mongla via rail or road. So, its cargo handling amount is relatively lower than Chittagong port. In 2018-2019, the number of container handled by Mongla port was 57732 TEUS [7].

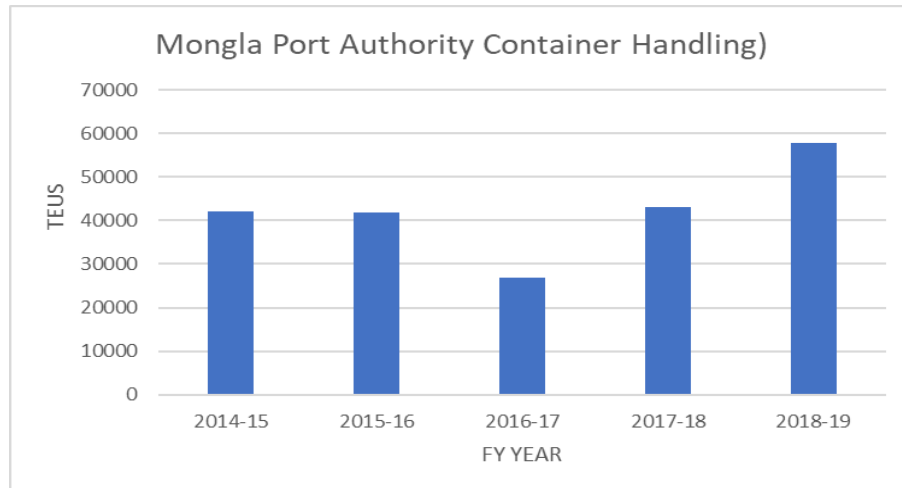


Fig 2: Container handling data of Mongla port (Source: MPA.gov.bd)

This port has a good waterway connection with other parts of country. For this reason, it is mainly used to handle bulk commodities which easy to carry by river route. Global trades have increased rapidly to achieve competitive advantageous position of exporting goods in certain sectors like garments, light machineries, knitwear, medicine, frozen food, leather and jute products [4]. Raw materials also prerequisite to import from various sources. Thus cargo handling for both Chittagong port and Mongla port have raised remarkably. The location of these ports along with other river ports are shown in figure 3:



Fig 3: Sea and River ports in Bangladesh

The ICD (inland Container depot) at Kamalapur is well connected to Chittagong port via rail and road. It has to handle 500 TEUs capacity against capacity of 4000 TEUs [8]. In 2013 another ICD of handling capacity 116000TEUs annually and storage capacity of 3500TEUs at Pangaon had been inaugurated in order to reduce pressure of Kamalapur ICD [9]. But sadly less than 28000 TEUs were handles by Pangaon ICD in 2018 [10].

According to liner shipping connectivity index Bangladesh is currently ranked 83rd [4], which was 104th in 2007[9]. And its score increased to 12.07[4] from 5.2 in 2007[11]. Ministry of shipping, ministry of road transport, ministry of bridge, ministry of railways and ministry of civil aviation and tourism; all these separate ministries deal with the transportation system of Bangladesh. Moreover, different parental and government organization like DOS, BIWTA, BIWTC, etc. involve in different level of planning, development, operation and control. However, due to lack of proper policy and coordination, multimodal transportation system still unsatisfactory.

Bangladesh has legalized the Carriage of Goods by Sea Rule (Hague Rule), 1925. Road and inland waterways followed the Carrier Act in 1865 to limit the loss or damage to property delivered to them to be carried. As a carrier, Bangladesh railway covers its liability under the Railway Act in 1890 [12]. Legal harmony to integrate different modes of transport is also required. Basically to conduct a contract involved in such multimodal operation, the forwarder required to follow UNCTAD/ICC rule,1992.

3.Possibilities of multimodal transport

About 1.5 million containers were handles in 2015 by Chittagong Port Authority (CPA). 2.34 million containerized Cargo was handled in 2016-17 [13]. Now it controls over 3 million in a year. On an average, container handling is increasing at a rate of 16% annually. Though the CPA has taken necessary measures to increase its capability. Mongla port authority also took several steps to increase its cargo and container holding capacity. To improve hinterland connectivity, several measurements also undertaken by different parental and government agencies. But, being a densely populated country it is very difficult to acquire mass peoples' lands to widen road and multiple railway tracks. Apart from that physical works are visible improving Dhaka-Chittagong

railway into two lanes and Dhaka-Chittagong highway to four lanes, which will lead towards seamless hinterland connectivity. The construction of Padma bridge will add opportunity to transport system from Mongla and Payra port to Dhaka through both railway and road. Currently, the construction of Karnaphuli tunnel in Chittagong is going on. It will connect Chittagong port to Anwara, where government is planning on establishing new export processing zone. As a result, the freight can be carried quickly through the tunnel [17].

There is no alternative to add waterways transport to the multimodal transportation system being a riverine country; also Bangladesh has a better connectivity through IWT to the main sea ports at Chittagong and Mongla [4]. As the limited railways and road infrastructure wouldn't able to bear much, the transportation of container needs to divert from it. Realizing the matter, several ICT project has been taken under public-private partnership apart from Pangaon ICT. Among these Summit Alliance Port limited (SAPL) has already on operation and currently handles 20% of country's container exports and 10% of permitted imports [14]. The other private port operation of Rupayan Group and AK khan Group are still on the way. Bangladesh has a vast river network with neighbouring country India. To ease the import-export with India, Bangladesh signed Indo-Bangla protocol on Inland Water Trade and Transit. Moreover, under this protocol, the 285-km-long Ashuganj-Zakiganj and 185-km-long Sirajganj-Daikhawa protocol routes will be dredged to increase the route navigability and India and Bangladesh will bear the dredging cost on 80:20. The protocol route and the port of call under this protocol is given in the figure:



Fig 4: Indo-Bangla river trade and transit protocol route (source: BIWTA.portal.gov.bd)

The integration of transportation including all the activities in supply chain will lead towards to achieve competitive cost and delivery output efficiently. Though transportation system infrastructure is developing, lack of integration is the reason to achieve competitiveness in term of transportation yet. So, it is high time to introduce multimodal transportation system in Bangladesh.

4. Problems and Shortcomings

Theoretically, lack of adequate infrastructure and proper policy is the main obstacle to implement multimodal transportation system. According to reference [15] there are six indicators that create differences in maritime freight namely distance, economy of scale, imbalance, types and values of goods, competition and port characteristics.

In Bangladesh, ports are doing moderately well; small liner shipping and tramp shipping companies are also growing. Because of lower depth limit of Chittagong port, there is constraints for big liners or global operators. The availability of deep sea port could contribute to relief from extra costs in several aspects. It is necessary to open the door for global port operators in order to develop a sustainable door to door transport system.

A good cooperation among the regional and global transportation service providers should be introduced. Though shortage of available land will lead cargo transportation through waterways, hinterland connectivity also needs to prioritize. Though private-public collaboration is trying to improve transportation system but it not enough yet. Government should monitor carefully to sustain development. As highlighted earlier, in 2018 Pangaon ICT handled only about 28000 TEUS while annual capacity having 116000 TEUs. More than 50 service providers have been issued with license to operate ship from Chittagong and Mongla to Pangaon; But they are not working efficiently. Moreover, to transport valuable cargo, shippers are still worried about its performance of IWT.

The national IMMTP (Integrated Multimodal Transport Policy) has been working since 2013 and aims to build a secure, smooth, dependable and uninterrupted transport network introducing the relative obstacles in road, rail and inland waterways including the access to the sea and air ports. Though it is almost new and hopefully will be able to create positive impacts. Considering customs as obvious part of import and export, there is an opportunity to improve customer services. Investors along with entrepreneurs think that customs procedure and formalities are more complex than infrastructure impediments [4]. Warehouse to stock is also required. WMS (warehouse management system) and EDI (electronic Data Interchange) was also concern to transfer data among biggest shipper, customs and ports.

As Bangladesh doesn't have strict legal framework for multi-modalism, it is required to ratify an international convention. From sea leg to inland haulage no additional international liabilities limit for service providers which will uphold the growth of marine economy for Bangladesh.

5. Areas that Need Emphasis in Order to Facilitate the Multimodal System

From the above discussion, we can clearly highlight the considerable area. First of all, waterways need to develop and to be connected to roads and terminals effectively. Secondly, infrastructure development to successful Deep seaport initiative and hinterland connectivity seamlessly. Thirdly, to provide user friendly transport environment and generate professionalism government needs to take effective policy in case of customs and clearance procedure; commitment also required to run the entire system fluently. Finally, to provide door to door transport facilities, information technology is pre-required.

6. Conclusions

Transportation is an essential part of supply chain process and transportation cost is an obvious part of product in today's world. Cost reduction is required to obtain competitive advantage in manufacturing goods. Therefore, it is appropriate to introduce multimodal transport system to reduce cost of manufacturing goods. It is conspicuous that Bangladesh also could be advanced implementing multimodal transport system to compete on the international market with India, Pakistan, Vietnam, Taiwan, Thailand and some extent with China.

Appendix

MT- Multimodal Transportation

IWT- Inland Waterway Transport

CPA-Chittagong Port Authority

ICT- Inland Container Terminal

ICD- Inland Container Depot

DOS- Department of Shipping

BIWTA- Bangladesh Inland Water Transport Authority

BIWTC- Bangladesh Inland Water Transport Corporation

WMS- Warehouse Management System

EDI -Electronic Data Interchange

SAPL-Summit Alliance Port Limited

IMMTP -Integrated Multimodal Transport Policy

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